Amendments to the Claims:

1. (currently amended) A combinatorial chemical synthesis reaction tool, comprising:

a plurality of reaction vessels adapted for chemical synthesis,

a reaction vessel support disposed to hold the plurality of reaction vessels in a preferred orientation,

a plurality of injection ports, each injection port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of injection ports operable for the injection of liquids into said reaction vessels,

a plurality of evacuation ports, each evacuation port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of evacuation ports operable for the evacuation of fluids from said reaction vessels, and

a plurality of injection fittings and evacuation fittings formed to matingly engage said respective injection and evacuation ports and to thereby enable the simultaneous delivery of fluids to the reaction vessels ~~and~~ or the simultaneous evacuation of fluids from said reaction vessels.

2. (original) The reaction tool of claim 1, wherein said injection port is located at the top of said reaction vessel.

3. (original) The reaction tool of claim 2, wherein said evacuation port is located at the top of said reaction vessel.

4. (original) The reaction tool of claim 2, wherein said evacuation port is located at the bottom of said reaction vessel.

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5. (original) The reaction tool of claim 1, further comprising:

a supplying vessel, and flexible tubing connected directly from said injection fitting to said supplying vessel.

6. (original) The reaction tool of claim 5, further comprising:

a receiving vessel, and

flexible tubing connected directly from said evacuation fitting to said receiving vessel.

7. (original) The reaction tool of claim 1, wherein said evacuation port is a spring-loaded port.

8. (original) The reaction tool of claim 1, wherein said reaction vessel support comprises:

top and bottom vessel support plates with tapered injection through fittings.

9. (original) The reaction tool of claim 8 further comprising an actuator to selectively control movement of the top and bottom vessel support plates.

10. (canceled)

11. (previously presented) The reaction tool of claim 66, further comprising:

a top carousel fitting plate with fittings arranged in a ring around the periphery of said top carousel fitting plate to match the tapered injection through fittings of said top carousel vessel support plate.

12. (original) The reaction tool of claim 11, further comprising:

a bottom carousel fitting plate with fittings arranged in a ring around the periphery of said bottom carousel fitting plate to match the tapered evacuating through fittings of said bottom carousel vessel support plate.

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13. (original) The reaction tool of claim 12, wherein said top and bottom carousel fitting plates close to simultaneously engage the injection fittings of said carousel top fitting plate with the tapered injection through fittings of said top carousel vessel support plate and to simultaneously engage the evacuating fittings of said bottom carousel fitting plate with the tapered through fittings of said bottom carousel vessel support plate.

14. (original) The reaction tool of claim 13, wherein said vessel support carousel is connected to rotate under control of a motor to thereby align fittings and through fittings in a desired manner when said fitting plates are disengaged.

15. (original) The reaction tool of claim 14, wherein said vessel support carousel is reciprocally moved to agitate the reaction vessel.

16. (original) The reaction tool of claim 13, wherein the top and bottom carousel plates can be selectively moved to agitate the reaction vessel.

17. (original) The reaction tool of claim 1, further comprising:

a stirring motor with a magnet attached to its shaft, said magnet positioned adjacent a sidewall of said reaction vessel; and

a stirring bar located within said reaction vessel, said stirring bar tending to follow the rotation of said magnet.

18. (currently amended) The reaction tool of claim 1, further comprising:

electromagnetic coils mounted around the outside of said reaction vessel, and

a tapered whisk stirrer located within said reaction vessel, said stirrer being responsive to varying magnetic fields produced by said ~~push-pull~~ coils by rotating within said reaction vessel, thereby stirring the contents of said vessel.

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19. (original) The reaction tool of claim 1, further comprising:

electromagnetic push-pull coils mounted adjacent the outside of said reaction vessel, and

a floating stirrer located within said reaction vessel said stirrer being responsive to varying magnetic fields produced by said push-pull coils by rotating within said reaction vessel, thereby stirring the contents of said vessel.

20. (original) The reaction tool of claim 1, further comprising:

a resistive heater which snaps on to the exterior of said reaction vessel.

21. (original) The reaction tool of claim 20, wherein said resistive heater includes means for selective on-line control.

22. (original) The reaction tool of claim 1, further comprising a U-valve formed of flexible tubing and connected to regulate the flow of liquids from said evacuation through fitting.

23. (currently amended) A universal fluid exchanger comprising:

a plurality of reaction vessels adapted for chemical synthesis;

a reaction vessel support disposed to hold the plurality of reaction vessels in a preferred orientation;

a plurality of injection ports, each injection port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of injection ports operable for the injection of liquids into said reaction vessels;

a plurality of evacuation ports, each evacuation port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of evacuation ports operable for the evacuation of fluids from said reaction vessels;

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a plurality of injection fittings and evacuation fittings formed to matingly engage said respective injection and evacuation ports and to thereby enable the simultaneous delivery of fluids to the reaction vessels ~~and~~ or the simultaneous evacuation of fluids from said reaction vessels; and

an actuator for controlling selectively aligning the injection and evacuation ports of the plurality of reaction vessels ~~and~~ with the injection and evacuation fittings, respectively.

24. (original) The fluid exchanger of claim 23, wherein said injection port is located at the top of said reaction vessel.

25. (original) The fluid exchanger claim 24, wherein said evacuation port is located at the top of said reaction vessel.

26. (original) The fluid exchanger of claim 24, wherein said evacuation port is located at the bottom of said reaction vessel.

27. (original) The fluid exchanger of claim 23, further comprising:

a supplying vessel; and

flexible tubing connected directly from said injection fitting to said supplying vessel.

28. (currently amended) The fluid exchanger of claim 23, further comprising:

a receiving vessel; and

flexible tubing connected directly from said evacuation fitting to said receiving vessel.

29. (currently amended) The fluid exchanger of claim 23, wherein said evacuation ~~post~~ port is a spring-loaded port.

30. (canceled)

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31. (previously presented) The fluid exchanger of claim 67, further comprising:

a top carousel fitting plate with fittings arranged in a ring around the periphery of said top carousel fitting plate to match the tapered injection through fittings of said top carousel vessel support plate.

32. (original) The fluid exchanger of claim 31, further comprising:

a bottom carousel fitting plate with fittings arranged in a ring around the periphery of said bottom carousel fitting plate to match the tapered evacuating through fittings of said bottom carousel vessel support plate.

33. (original) The fluid exchanger of claim 32, wherein said top and bottom carousel fitting plates close to simultaneously engage the injection fittings of said carousel top fitting plate with the tapered injection through fittings of said top carousel vessel support plate and to simultaneously engage the evacuation fittings of said bottom carousel fitting plate with the tapered through fittings of said bottom carousel vessel support plate.

34. (currently amended) The fluid exchanger of claim 33, wherein said actuator is connected to said vessel support carousel ~~causes~~ causing it to rotate under control of a motor to thereby align fittings and through fittings in a desired manner when said fitting plates are disengaged.

35. (original) The fluid exchanger of claim 23, further comprising:

a stirring motor with a magnet attached to its shaft, said magnet positioned at the sidewall of said reaction vessel; and

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a stirring bar located within said reaction vessel, said stirring bar being responsive to the rotation of said magnet by similarly rotating.

36. (original) The fluid exchanger of claim 23, further comprising:

electromagnetic coils mounted to the exterior of said reaction vessel; and

a tapered whisk stirrer located within said reaction vessel, said stirrer being responsive to varying magnetic fields produced by said coils by rotating within said reaction vessel, thereby stirring the contents of said vessel.

37. (original) The fluid exchanger of claim 23, further comprising:

electromagnetic coils mounted to the exterior of said reaction vessel; and

a floating stirrer located within said reaction vessel said stirrer being responsive to varying magnetic fields produced by said coils by rotating within said reaction vessel, thereby stirring the contents of said vessel.

38. (original) The fluid exchanger of claim 23, further comprising:

a resistive heater which snaps on to the exterior of said reaction vessel.

39. (original) The fluid exchanger of claim 38, wherein said resistive heater includes a controller for on-line control.

40. (original) The fluid exchanger claim 23, further comprising a U-valve formed of flexible tubing and connected to regulate the flow of liquids from said evacuating through fitting.

41. (original) The fluid exchanger of claim 34, wherein said supplying vessels are connected to supply reagents and solvents for use in combinatorial chemical synthesis.

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42. (original) The fluid exchanger of claim 41, wherein the actuator further comprises a carousel rotation motor connected to rotate said vessel support carousel; and said fluid exchanger further comprises:

a resistive heater which snaps on to the exterior of said reaction vessel,

a stirring motor with a magnet attached to its shaft, said magnet positioned at the sidewall of said reaction vessel; and

a controller connected to control said carousel rotation motor, said resistive heater and said stirring motor.

43. (original) The fluid exchanger of claim 42, further comprising:

a plurality of reaction vessels, each having a resistive heater snapped on to its exterior; and

a plurality of stirring motors positioned at the sidewalls of said reaction vessels, with each resistive heater and each stirring motor connected for stored program control by said controller.

44-46. (canceled)

47. (currently amended) A combinatorial chemical synthesis reaction tool for providing fluids to a plurality of chemical synthesis reaction vessels, comprising:

a reaction vessel support adapted to hold the plurality of reaction vessels in a preferred orientation,

an injection port, including a pressure seal, situated to provide access to each one of the reaction vessels for the injection of liquids into said reaction vessels,

an evacuation port, including a pressure seal, situated to provide access to each one of the reaction vessels for the evacuation of fluids from said reaction vessel, and

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a plurality of injection fittings and evacuation fittings formed to matingly engage said respective injection and evacuation ports and to thereby enable the simultaneous delivery of fluids to the reaction vessels ~~and~~ or the simultaneous evacuation of fluids from said reaction vessels.

48. (previously presented) The reaction tool of claim 47 further comprising the plurality of reaction vessels and wherein at least one of the reaction vessels comprises:

an enclosed vessel having a first inlet and a second inlet disposed proximately to a first end thereof, and an outlet disposed proximately to a second end thereof;

a first stopcock disposed within the first inlet; and

a second stopcock disposed within the outlet, said at least one reaction vessel adapted for ready insertion and removal from the reaction vessel support.

49. (previously presented) The reaction tool of claim 48 wherein the reaction vessel further comprises:

means for preventing solid phase material from escaping from the reaction vessel via the outlet while allowing fluid to flow through the outlet.

50. (previously presented) The reaction vessel of claim 49 wherein said means comprises a first frit disposed within the vessel at the second end thereof so as to prevent solid phase materials from escaping from the vessel via the outlet.

51. (previously presented) The reaction vessel of claim 50 wherein the distance between the first frit and the outlet is less than the thickness of the first frit.

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52. (previously presented) The reaction vessel of claim 48 further comprising means for preventing solid phase material from escaping from the reaction vessel via the first inlet, while allowing fluid to enter the vessel via the first inlet.

53. (previously presented) The reaction vessel of claim 50 further comprising a second frit disposed within the first inlet.

54. (previously presented) The reaction vessel of claim 48 wherein the reaction vessel comprises glass.

55. (previously presented) The reaction vessel of claim 54 wherein the glass is strengthened adjacent to said outlet.

56. (previously presented) The reaction vessel of claim 48 wherein the outlet extends at an angle from a central axis extending lengthwise through the reaction vessel.

57. (previously presented) The reaction vessel of claim 56 wherein said angle is less than or equal to ninety degrees.

58. (previously presented) The reaction vessel of claim 56 wherein the second inlet extends at an angle from a central axis extending lengthwise through the reaction vessel.

59. (previously presented) The reaction vessel of claim 48 wherein the second inlet comprises a ground upper section adapted to receive a stopper therein thereby sealing the second inlet.

60. (previously presented) The reaction vessel of claim 48 wherein the second inlet comprises a threaded end adapted to receive a threaded cap.

61. (previously presented) The reaction vessel of claim 60 wherein the threaded end or cap comprises Teflon.

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62. (previously presented) The reaction vessel of claim 48 wherein said vessel is enclosed by an outer hollow shell comprising an outer wall and an inner wall defining a liquid tight space therebetween.

63. (previously presented) The reaction vessel of claim 62 further comprising a fluid inlet adapted to allow fluid to flow within said hollow shell, and a fluid outlet adapted to allow fluid to flow out of said hollow shell.

64. (previously presented) The reaction tool of claim 47 further comprising the plurality of reaction vessels and wherein at least one of the reaction vessels comprises:

an enclosed vessel having a first inlet and a second inlet disposed proximately to a first end thereof, and an outlet disposed proximately to a second end thereof:

a first stopcock disposed within the first inlet;

a second stopcock located within the outlet; and

an outer hollow shell surrounding the interior reaction volume of the reaction vessel, said at least one reaction vessel adapted for ready insertion and removal from the reaction vessel support and custom fitting said support.

65. (previously presented) The reaction tool of claim 64 wherein the reaction vessel further comprises:

means for allowing fluid to flow through said outer hollow shell.

66. (previously presented) A combinatorial chemical synthesis reaction tool, comprising:

a plurality of reaction vessels,

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a reaction vessel support disposed to hold the plurality of reaction vessels in a preferred orientation, said reaction vessel support comprising top and bottom vessel support plates with tapered injection through fittings, the top and bottom support plates forming a carousel and the tapered injection through fittings being formed in a ring around the periphery of said top carousel vessel support plate and tapered evacuation fittings formed in a matching ring around the periphery of said bottom vessel support carousel plate,

a plurality of injection ports, each injection port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of injection ports operable for the injection of liquids into said reaction vessels,

a plurality of evacuation ports, each evacuation port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of evacuation ports operable for the evacuation of fluids from said reaction vessels, and

injection and evacuation fittings formed to matingly engage said respective injection and evacuation ports and to thereby enable the delivery of fluids to the reaction vessels and the evacuation of fluids from said reaction vessels.

67. (previously presented) A universal fluid exchanger comprising:

a plurality of reaction vessels;

a reaction vessel support disposed to hold the plurality of reaction vessels in a preferred orientation, the reaction vessel support further comprising top and bottom carousel vessel support plates with tapered injection through fittings formed in a ring around the periphery of said top carousel vessel support plate and tapered evacuation fittings formed in a matching ring around the periphery of said bottom vessel support carousel plate;

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a plurality of injection ports, each injection port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of injection ports operable for the injection of liquids into said reaction vessels;

a plurality of evacuation ports, each evacuation port including a pressure seal, situated to provide access to one of said reaction vessels, the plurality of evacuation ports operable for the evacuation of fluids from said reaction vessels;

injection and evacuation fittings formed to matingly engage said respective injection and evacuation ports and to thereby enable the delivery of fluids to the reaction vessels and the evacuation of fluids from said reaction vessels; and

an actuator for controlling selectively aligning the injection and evacuation ports of the plurality of reaction vessels and the injection and evacuation fittings, respectively.

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